

Oozing Soil, Vague Ownership, Lack of Funds,
for Some 145 Years Have Hampered Efforts in

RECLAIMING

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"Swamp lands are blurs upon the fair face of nature; they are fever breeding places; scourges of humanity; which, instead of yielding the fruits of the earth and adding wealth to the general community, only supply to the neighboring places poisonous exhalations and torturing mosquitoes. They are, for all practical purposes, worthless; and the imperative necessity for their reclamation is obvious to all, and is universally conceded."

Frank Leslie's Weekly—
Nov. 16, 1867

EVERY man who for the first time climbs a hill overlooking the meadowlands finds himself instantly struck with the wonder that this sprawling acreage defies full use. The sight of the New York and Newark skylines on either side makes the vision of reclamation vivid today, but men dreamed of exploiting the meadows long before skyscrapers appeared. Frustration dogged the footsteps



Agriculture dominated development plans in the meadows until early 20th century. This vegetable farm in Moonachie extends to very edge of the foxtails.

Photo from Leslie's Illustrated Magazine of 1867 shows extent of iron dike sunk in meadows to reclaim land for agriculture. Pumping engine is at bottom. The view is east to Bergen Hill.



THE MEADOWS

By JOHN T. CUNNINGHAM

and clogged the shovels of every builder and meadowlands dreamer until recent times, however. Two great and well-conceived land schemes bogged down and disappeared in the 19th century. Early builders of roads and railroads knew constant battling with the oozing soil. Farmers learned to shun the dank land.

It wasn't a matter of lack of know-how; the Dutch had reclaimed far more challenging areas long before. Instead, the very things which plague meadowland planners today—vague ownership, political maneuvering and lack of capital—overwhelmed the early planners too. Whatever the reasons, dreams sank out of sight and hearts were broken in the Jersey Meadows.

Most early settlers came to reckon that the Indians had possessed the right instinct when they avoided the broad flats surrounding the Hackensack River and Newark Bay. Red men seldom ventured into the swamps, preferring to skirt the edges or to float down the broad Hackensack in

canoes, quickening their paddling as they passed dreaded Snake Hill rearing above the marshes.

NOT all colonists found their first sight of the meadowlands repelling, however. Indeed, the first Dutch colonists evidently liked this flat reminder of their homeland, and the original English settlers of Newark found the waving green meadows grasses reminiscent of the colony they had left in Connecticut.

Land acquisitions, however, show the little value placed on meadowland. When Capt. William Sandford bought a vast tract between what are now Harrison and East Rutherford in 1668, the document read "5,308 acres of upland and 10,000 acres of meadow." Not an exact figure, notice, but 10,000 acres even; obviously the marshy area was not surveyed, nor did it matter.

Casual surveys of this land where the foxtails begin has been a rule from the start; not until the last 50 years or so have these acres taken on

genuine value. Many municipalities didn't even bother to tax meadowlands until the 1890s. Possibly with meadowland reclamation attempts fresh in mind, those town fathers felt sorry for the owners.

Local tax officials in the 1890s did

Frustration and failure — a common story of the Jersey Meadows. This third article in a series on the meadows deals with 19th century attempts to reclaim the marshy lands, and finds many a lesson pertinent to modern hopes for full reclamation.

not have to delve deeply into history books to find instances of major reclamation schemes. One noble effort particularly came to mind: The carefully planned and well-financed "iron dike" built shortly after the Civil War by Spencer Driggs, "inventive genius," and Samuel Pike, millionaire distiller, patron of the arts and sciences and

builder of the Cincinnati and New York opera houses.

DRIGGS, whose previous claim to fame had been invention of a piano "which sounded like a violin," thought of the idea of using thin iron plates, about one-half inch thick, as a core for earthen dikes. Previous efforts to reclaim meadowlands, Driggs argued, failed because muskrats and land crabs burrowed through the dikes and opened holes for the rising and falling tides.

His iron dike scheme tucked securely in his mind, Driggs quietly bought up land. As a writer for Leslie's Illustrated Magazine wrote in November 1867: "He dared not let his left hand know what his right hand did, lest owners raise prices. He worked like a mole, and foot by foot he acquired the coveted soil, until he owned 5,000 acres by right and title beyond dispute."

Good fortune came: Driggs, with an idea, met Pike, with money.

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Completely undeveloped meadows appear in picture of colonial Newark. Note windmill on bank of Passaic River. Main road is Market St. Newark Bay is at upper right.

Courtesy Newark Library.

RECLAMATION

(Continued from Preceding Page)

Late in 1867 several miles of dikes extended over the meadows, keeping out the Passaic and Hackensack rivers on the south and east and running up Sawmill and Kingsland creeks on the north to keep tidal waters out on the north. Day after day Pike and Driggs came to watch their small army of workers push the iron plates into the

muck below low tide level; mile after mile of dike appeared.

The New York Iron-Dike and Land Reclamation Co. finished the dikes, sold off land to farmers who grabbed at the alluring prospect that "the rich, easily worked land will grow crops tenfold — without manure." Owners of adjacent land refused offers of \$1,000 an acre for their land. The New York Times in March 1871 reported that "the enterprise of bringing it into cultivation bids fair to be a success."

A YEAR later Pike died, his great fortune augmented a bit by sales of acreage behind the dikes; at least he didn't drop anything in the meadows. The farmers who bought the acres apparently did: One reports tells of corn growing lushly in the reclaimed marsh, shooting up 10 feet tall—without so much as an ear of corn in the entire field.

The Pike dike did not collapse and disappear as might be supposed. Reinforced and rebuilt through the years,

it became the basis for the Bergen County Mosquito Commission's dike system in lower Bergen. Portions still existed in 1950, when a southeast storm broke the dikes and flooded the sunken meadows in North Arlington. Blame the sunken meadows on the iron dikes, too: The peaty soil behind the dikes, drained of moisture, has shrunk three to four feet.

Actually, from this distinct vantage point of hindsight, Messrs. Driggs and Pike should have had industrial or commercial development in some corner of their minds. Railroads cut across and beside their diked lands. Smack across the heart of the property ran the Belleville and Newark turnpikes, examples of early and reasonably successful efforts to beat the meadowland at its sinking game. Both are still in existence, albeit somewhat better paved (and considerably more crowded).

Belleville Turnpike traversed the meadows soon after 1758 and the original parts of Newark Turnpike followed soon after. A trip on either road was enough to test the most hardened traveler: The roadway consisted simply of trees felled crosswise, with occasionally some dirt tossed on the roughest spots to smooth the way.

MOREAU DE ST. MERY, a French visitor, happened on the meadows in 1794 and didn't enjoy himself one bit. He crossed the Passaic River on a ferry, reached the Hackensack after "20 minutes of joltings" and passed over this river on a sailboat ferry which took 15 minutes between west and east banks.

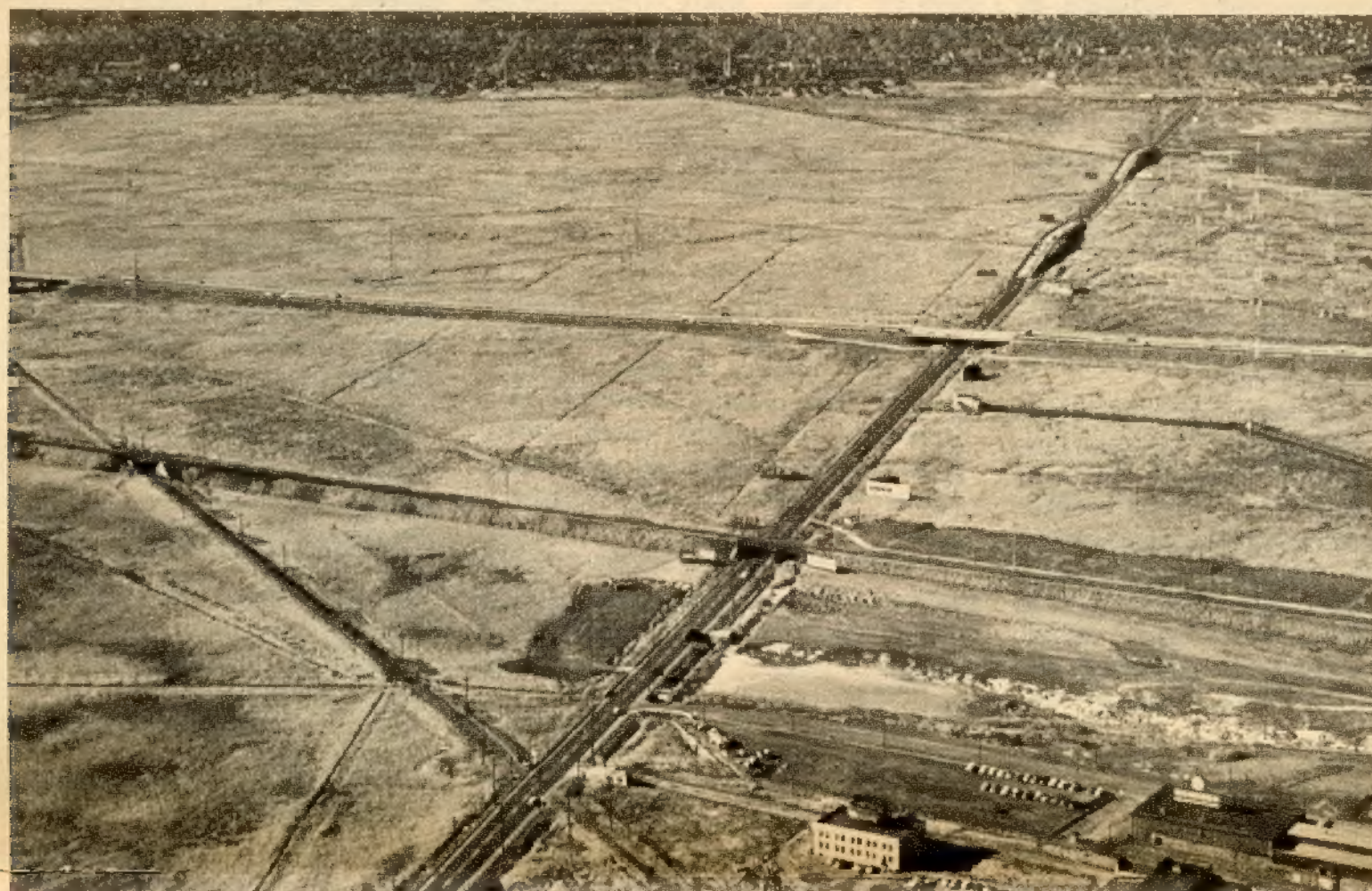
Beyond the Hackensack, on the way to Paulus Hook (Jersey City), M. de St. Mery found the meadows "anything but lovely—and endurable only because of the hideous roadways of the two preceding rivers." M. de St. Mery could not qualify as a meadowlands promoter.

Another Frenchman, J. P. Brissot de Warville, who crossed the meadows in 1788, found it "really astonishing: It recalls to mind the indefatigable industry of the Dutch." He was especially impressed with the road (Belleville Turnpike) Philip Schuyler had built in 1768 to his Arlington copper mine. Of this road, across land "that trembles under your feet," de Warville wrote: "It proves to what point may be carried the patience of a man who is determined to conquer nature."

Sadly, though, patience could be engulfed by the meadows.

Never was this more poignantly underscored than in the case of the three Swartwout brothers of New York City, who labored mightily and spent freely (including some monies not their own) in a vain effort to reclaim thousands of acres of marshland in Hudson County. The Swartwouts began as early as 1814; the last of the three, when he died in 1848, was still enamored of the meadowlands which had broken his heart for 30 years.

THE Swartwouts had wealth and family position: Gen. Robert counted Henry Clay, James Monroe and Andrew Jackson as friends; John's paint



This is Belleville Turnpike, direct descendant of plank road built across meadows in 1858 to

serve Schuyler copper mine at North Arlington. This land once lay behind the huge iron dikes:

HAYMAKERS KAYOED IN MEADOWS

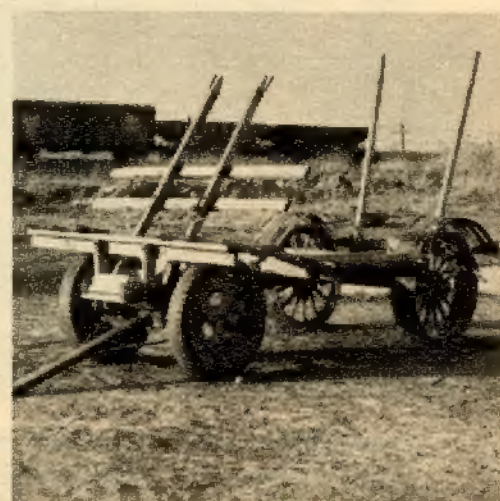
AMONG the useless cattails and foxtails here and there, once-valuable salt hay grows in the Jersey Meadows. There isn't much left — and what is left is costly to get out.

Throughout the 19th century, however, farmers regularly included meadowland salt hay as a crop. Many went out into the marshlands in winter, when the wet flats were frozen, and cut the lushly growing hay.

They found ready markets in the brick yards at Hackensack and Little Ferry, in the horse stables on the surrounding hills, in the many ice storage houses and in the glassware and crockery manufactories of the state. The opening of several banana sales houses in Newark in the 1890s created a big demand for its use in layering the fruit.

Sometimes salt hay became big business. One verified case tells of a meadows farmer who

in 1858 had been regularly cutting salt hay for 20 years. His 500 acres of land averaged about four tons per acre and the hay was worth \$20 a ton in New York. Over the 20-year period he had averaged \$60 an acre, or \$30,000 a year.



Old wide-wheeled hayrick.

RAILROAD tracks, public roads, drainage ditches and dikes hemmed in the hay makers by 1900, but even within the 20th century, Union County farmers drove their heavily laden wagons along Farmers Rd. out of the meadows to Elizabeth. Still, by 1900, \$5 a ton was a good price.

Bill Ballenski of Newark lingered far longer than most, but last fall he sadly put away his tractors and rakes and his wide-wheeled hay ricks as the new Pork Elizabeth development moved across his hay fields. Bill, now 53, had cut hay there since 1921, continuing a business started by his father in the 1890s.

His markets had shrunk, from the old days of supplying glass-makers and crockery manufacturers to modern uses by florists for winter covering. He received \$36 a ton, but profits were far down. Thus the rocket age caught up with salt hay.

Business earned him a fortune, and Samuel, one-time secretary to Aaron Burr, served as collector of the Port of New York during Jackson's presidency. These were not will-o'-the-wisp schemers.

Not that the brothers scorned a speculative dollar. Quite frankly they hoped to turn the 4,200 acres of salt marsh over the hill from Hoboken into something tidy enough to earn them considerable dividends on the \$200,000 they had invested.

Gen. Robert provided the family swamp fire. Under his goading the Hackensack & Passaic Meadows Co. dug 120 miles of ditches and built 7½

trient to supply milk for the New York market.

NEW YORK officials declined the mortgage. Enough city matters strained their budget, they said, without their sinking money in New Jersey.

The weary years dragged on. September tides in 1819 damaged the dikes. Muskrats burrowed through, leaving holes for the tidal waters to widen. Changes of company names—such as New Jersey Salt Marsh Co. and Hoboken Banking and Grazing Co.—didn't make things better. John Swartwout died in 1823, his former fortune sunk in the meadows.

It just didn't work, that's all. Prophetically, perhaps, Gen. Robert sold 75 acres to Hudson County for the Poor House Farm at Snake Hill in 1826. The lands became mortgaged, the muskrats dug on, Samuel Swartwout suddenly left his job as collector of the Port of New York and sailed off to London in 1838 just before a one-million-dollar shortage in the port funds came to light. No one knows how much of the missing money disappeared in the Jersey Meadows; assuredly much of it did.

Gen. Robert died of a stroke in 1848, still vainly struggling to reclaim the meadows. The dream of a diked Hudson County paradise died with him.

Nevertheless, the Swartwout failure and the later Driggs-Pike semifailure proved that, given enough money, man could conquer the boggy land. The basic flaw in both ventures lay not in techniques of reclamation but rather in land use after reclamation.

THE Swartwouts, Driggs and Pike, and practically all 19th century planners, felt reclaimed land should be used for agricultural purposes, failing to recognize that the vast costs of reclamation could not be borne by an agricultural economy.

Most responsible planners also kept insisting that if the Dutch could keep out the tides, Americans could, too. To prove the point, a considerable number of New Jersey officials traveled to Holland—including a state legislator who in 1890 decided reclamation "would put the metropolis on this side of the Hudson where it belongs." He went to Holland, studied the Dutch dikes and returned with a detailed report, complete with prices of windmills. Nothing came of it (except a wonderful vacation).

One important 19th century voice, that of C. C. Vermeule, an exceptionally keen consultant in many state matters of the day, created a bridge between old and new meadowlands thinking in a study included in the 1896 report of the state geologist.

Vermeule foresaw a system of diking and pumping (the latter to move water off the inevitably shrunken meadows behind the dikes). This system quite likely will be used in any future large-scale Jersey Meadows development. He urged regional development, arguing that "the work can't be left in the hands of people who

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ONE TRACK MINDS

One bit of meadowland "improvement" which never drops completely from sight is a race track at Secaucus. The sportsmen whose interest in improving the breed prompts an annual request for a race track permit might have some historical standing at that.

The Hudson County Agricultural Society in 1864 announced plans to hold an annual fair at Secaucus to improve and encourage agricultural and horticultural pursuits. Galloping ponies seemed most fascinating to the Hudson County "farmers" because a Secaucus race track soon flourished under the Society's banner.

Then, in 1868, when the State Legislature granted a liquor permit, farmers (and moralists) elsewhere in the state charged the "Agricultural Society" had been taken over by a "sporting element."

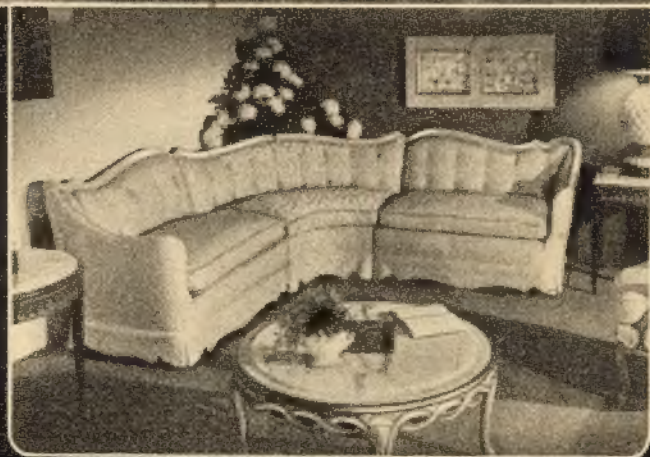
"Great spirit" ensued until 1869. But the spirit and enthusiasm for improving agricultural pursuits waned, possibly because the famed meadows mosquitoes put even a bigger bite on both horse and customers than a modern down-at-the-heels bookie. At any rate the picture changed when Bishop James Roosevelt Bayley, Bishop of Newark (in those days Newark Diocese included all New Jersey) purchased the site in 1870. But two years later Bishop Bayley was transferred to Baltimore and whatever religious plan, if any, he had for the agricultural grounds never materialized.

miles of dikes between 1816 and 1819. It was a fabulous undertaking for a time when only strong backs and stout shovels were available for the work and when few of the now well-established pitfalls of meadowlands development were understood.

Confident, but considerably poorer than they were in 1816, the Swartwouts in 1819 asked the City of New York to take a mortgage on 3,000 of their acres. They painted a handsome picture of life behind their five-foot-high dikes—a picture of crops growing rapidly and of a herd of 80 to 90 contented cows gaining sufficient nu-

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RECLAMATION

(Continued from Preceding Page)

happen to be temporary owners." He felt agricultural use of reclaimed land was still practical, but unlike his predecessors, he also saw a coming day of industry and commerce—a day when this meadows "must eventually become a vast city."

VERMEULE'S 1896 report is a remarkable document, almost as valid in 1959 as it was in 1896 (allowing, certainly, for circumstances which the writer could not possibly have foreseen then). Vermeule warned against development of a "trifling nature," against "offensive industries," against fringe uses which could choke off and kill extensive planned development.

More important, years before it happened, Vermeule forecast the heavy industrial development of the south Kearny area. The junction of five railroads in the area, the 28,000 feet of river frontage, the fact that the Driggs-Pike operation had dried much of the area, all combined to indicate rapid growth to Vermeule. His prediction of development has come true.

Twentieth century entrepreneurs, impatient with the past, tend to shrug off a century ago as so much ancient history. In some areas that might be logical—but not in the Jersey Meadows. The Jersey Meadows give not one inch without begrudging the giving; the sad lessons of Gen. Bob Swartwout and Spencer Driggs and Samuel Pike offer much to whoever hopes to conquer the meadows in 1959 or in the year 2000.

Gen. Swartwout learned this: It can't be done without huge sums of money. Driggs and Pike learned this: Reclamation fails in the meadows if only the economy of the moment is taken into account. And everyone learned this: The Jersey Meadows can't be conquered a tiny chunk at a time, without the imminent danger of ruining adjacent properties.

Dr. John B. Smith, who pioneered mosquito warfare in the meadows at the turn of the century, warned against this piecemeal, irresponsible development. He particularly scored the railroads for building embankments without studying natural drainage, for digging deep holes in the meadows for fill, for ignoring property rights of neighbors (although he found, to his astonishment, that even property owners cared little what happened in the marshes).

Therefore, in the light of a past century of meadowland frustration, read present-day suggestions for meadowlands reclamation. Most agree these will be needed: Money, planning for the future, and broad regional cooperation. Nineteenth century lessons are mighty close at hand: Some knew these things 75 years ago.

NEXT WEEK: The "Natural" Meadows.